

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-16 (Cancelled).

17. (currently amended) An electron emission element comprising:

a substrate forming a base portion;

an insulating layer on said substrate, said insulating layer having an open area at a center portion of said substrate;

a gate consisting of a metal layer provided on the insulating layer and extending in a direction inward of the open area;

a cold cathode comprising a crystalline thin film formed on the open area of the substrate and having a plurality of fine projection structure parts pointed in substantially the same direction;

said crystalline thin film consisting of a transparent conducting material selected from the group consisting of In_2O_3 , SnO_2 , ITO, ZnO , TiO_2 , WO_3 , and CuAlO_2 ;

wherein said cold cathode comprising a crystalline thin film is adapted to emit electrons from said fine

projection structure parts when a voltage is applied between the substrate and the gate.

18. (currently amended) An electron emission element comprising:

a substrate forming a base portion;

an insulating layer on said substrate, said insulating layer having an open area at a center portion of said substrate;

a gate consisting of a metal layer provided on the insulating layer and extending in a direction inward of the open area;

an interference layer comprising a conductive film formed on the open area of the substrate;

a cold cathode comprising a crystalline thin film formed on the interference layer and having a plurality of fine projection structure parts pointed in substantially the same direction;

said crystalline thin film consisting of a transparent conducting material selected from the group consisting of In_2O_3 , SnO_2 , ITO, ZnO , TiO_2 , WO_3 , and CuAlO_2 ;

wherein said cold cathode comprising a crystalline thin film is adapted to emit electrons from said fine projection structure parts when a voltage is applied between the substrate and the gate.

19. (previously presented) An electron emission element according to claim 18, wherein the film thickness of the crystalline thin film is controlled so that the end of the crystalline thin film is disposed on the same plane position of the gate when the crystalline thin film is formed on the interference layer.

20. (previously presented) An electron emission element according to claim 18, wherein the interference layer is formed of a resistive film.

21. (currently amended) An electron emission element according to claim 18, wherein the interference layer is formed of a transparent conductive film having the same orientation as that of the crystalline thin film.

22-23. (canceled)

24. (currently amended) A transparent flat display provided with an electron emission element as an electron source, the electron emission element comprising:

a transparent substrate forming a base portion;
an insulating layer on said transparent substrate,
said insulating layer having an ~~opening~~open area at a center portion of said transparent substrate;

a gate consisting of a metal layer provided on the insulating layer and extending in a direction inward of the open area of the transparent substrate;

a cold cathode comprising a crystalline thin film formed on the open area of the transparent substrate and having a plurality of fine projection structure parts pointed in substantially the same direction;

said crystalline thin film consisting of a transparent conducting material selected from the group consisting of In_2O_3 , SnO_2 , ITO, ZnO , TiO_2 , WO_3 , and CuAlO_2 ;

wherein said cold cathode comprising a crystalline thin film is adapted to emit ~~comprises means for emitting~~ electrons from said fine projection structure parts when a voltage is applied between the transparent substrate and the gate.

25. (currently amended) A transparent flat display provided with an electron emission element as an electron source, the electron emission element comprising:

a transparent substrate forming a base portion;
an insulating layer on said transparent substrate,
said insulating layer having an ~~opening~~ open area at a center portion of said transparent substrate;

a gate consisting of a metal layer provided on the insulating layer and extending in a direction inward of the open area of the transparent substrate;

an interference layer comprising a conductive film formed on the open area of the transparent substrate;

a cold cathode comprising ~~of~~ a crystalline thin film formed on the interference layer and having a plurality of fine projection structure parts pointed in substantially the same direction;

the crystalline thin film consisting of a transparent conducting material selected from the group consisting of In_2O_3 , SnO_2 , ITO, ZnO , TiO_2 , WO_3 , and CuAlO_2 ;

wherein said cold cathode comprising a crystalline thin film ~~comprises means for emitting~~ is adapted to emit electrons from said fine projection structure parts when a voltage is applied between the transparent substrate and the gate.

26. (previously presented) An electron emission element according to claim 17, wherein the substrate is made of a transparent material.

27. (previously presented) An electron emission element according to claim 18, wherein the substrate is made of a transparent material.

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28-29. (canceled)